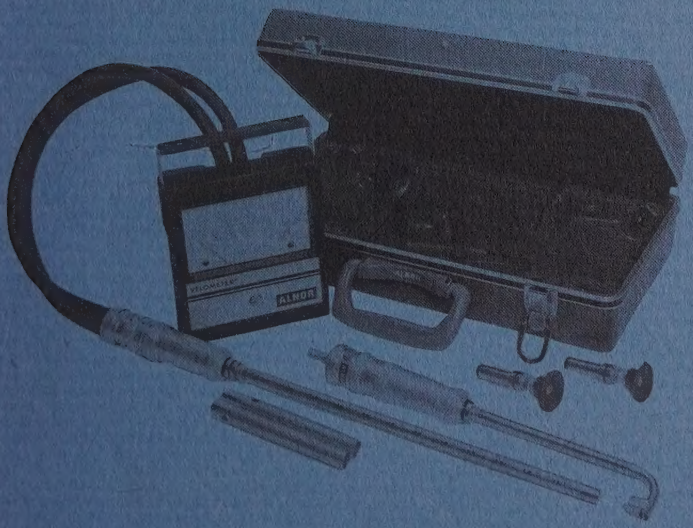
ALNOR®

VELOMETER®
SERIES 6000
OWNER'S MANUAL



SAFETY NOTICE

All necessary precautions must be observed when operating the Velometer in the vicinity of moving equipment such as motors and blowers. The user must exercise care to ensure that the probe or the instrument does not interfere with any moving equipment.

CAUTION

The maximum temperature at which the Velometer can be used is 250 °F (120 °C). The maximum pressure difference between the inside of the instrument housing and ambient is 4.2 psi. (8.6 gm/sq.cm.). The Velometer is **NOT** designed for gas mixtures other than air.

Any use beyond the operational temperature or pressure limits, or on gasses which are either combustible or may deteriorate materials in the Velometer, is not recommended and is at the user's risk.

WARRANTY

Your warranty information and reply card are enclosed elsewhere in this package. After locating this material, please return the reply card and maintain the Certificate of Calibration.

TRADEMARKS

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GENERAL DESCRIPTION

The Alnor Velometer is a direct reading instrument for measuring air velocities. It is designed to measure velocities inside heating and ventilating ducts, or in open areas such as at fume hoods, grilles, diffusers, slots on ventilated plating tanks, and so forth. It may also be used for measuring duct static pressures.

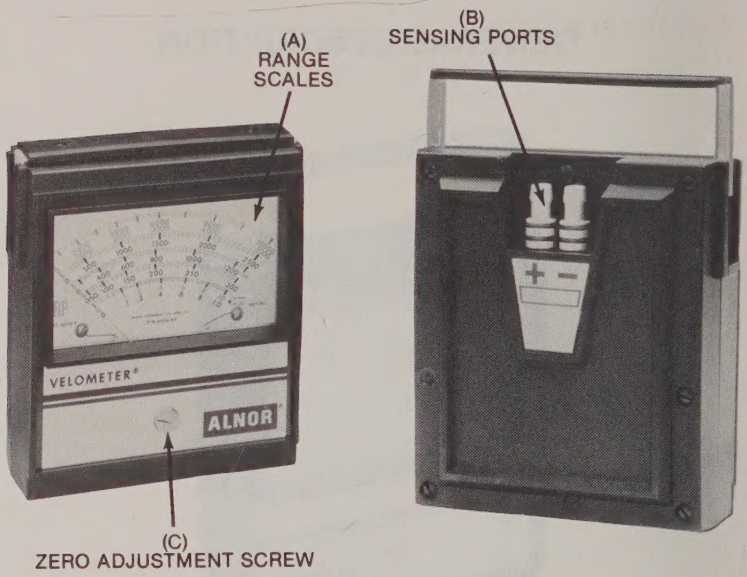
The Velometer set consists of the meter, velocity and static pressure range selectors, measuring probes and connecting hoses.

The Velometer is basically an air flow meter reading in feet per minute (or meters per second).

The Velometer is built with a taut band meter movement; it is carefully balanced so that you may hold the meter in any normal position and still get an accurate reading. All Velometers are uniformly calibrated to factory standards; hence, all accessories are interchangeable from instrument to instrument.

Before using the Velometer, study the operational instructions and procedures to insure proper use of the instrument for accurate results.

METER



The Meter is the nerve center of the Velometer set. It receives the sensing signal from the various probes and translates it to a velocity or static pressure reading.

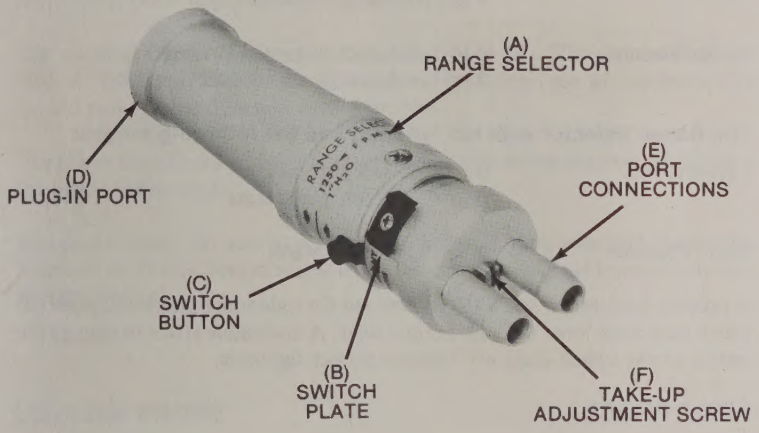
On the face of the meter there is a series of range scales **(A)** which enables you to read accurately the measured value. Since there are a number of ranges, it is important that the scale read on the meter face corresponds to the velocity or static pressure range that is set on the Range Selector.

On the back side of the meter there are two sensing ports (hose connections) **(B)** which are for interconnecting to one of the two Range Selectors with hoses. One port is marked postive (+) and the other negative (—).

Sensing port caps are provided and you should place them over the sensing ports when the meter is not in use.

Check to see that the pointer is at zero each time the meter is put into service. The zero adjustment screw **(C)** enables you to make an adjustment. With the caps still on the ports, use a screwdriver to bring the pointer to zero. It should continue to read zero whether the meter is lying flat, standing upright or is at any position in between, including the position where one end of the scale is lower than the other.

RANGE SELECTOR



The range selector **(A)** allows you to switch to one of two velocity ranges or a static pressure range by means of a switch plate **(B).**

A switch button **(C)** is provided for changing the Velometer from use with a Pitot Probe to use with either a Diffuser Probe or a Static Pressure Probe.

CAUTION:

WHEN USING THE PITOT PROBE, TURN THIS BUTTON AND ALLOW IT TO SPRING OUT; WHEN USING EITHER THE DIFFUSER PROBE OR A STATIC PRESSURE PROBE, PUSH THE BUTTON IN AND TURN TO LOCK IT IN POSITION. IN THIS POSITION THE SWITCH BUTTON SLOT MUST BE VERTICAL (ALIGNED WITH ARROWS ON LABEL) FOR PROPER INSTRUMENT OPERATION.

Do not block switch button during operation.

The Range Selector is provided with a plug-in port **(D)** which accepts the various probes and allows you to rotate them 360°. (+) and (—) ports **(E)** are provided for hose connections to the Meter.

Depending on your model, your set will include one or two Range Selectors that are indentified by red or black lettering. This color coding relates to the same colored scales on the meter.

The Range Selector with the black lettering has the following ranges:

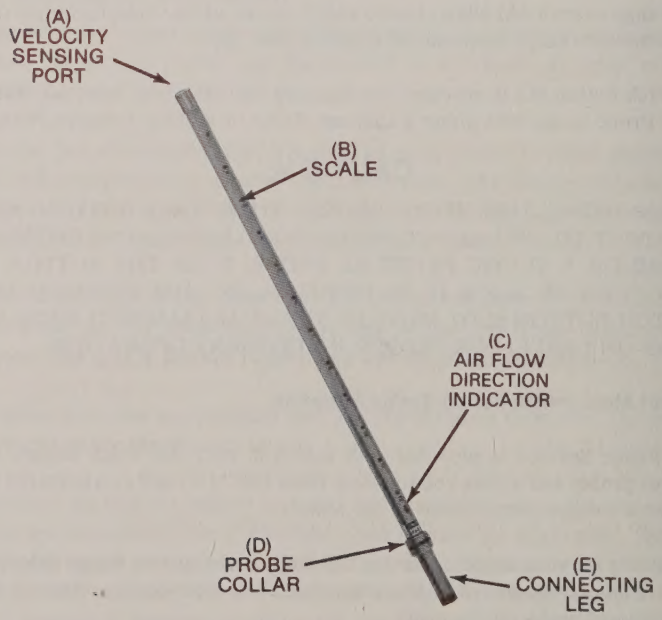
Velocity:	0 to 1250 feet per minute 0 to 2500 feet per minute
Static Pressure:	0 to 1 inches of water (6000AP set) 0 to 3 inches of water (6000BP set)

The Range Selector with red lettering has the following ranges:

Velocity:	0 to 5000 feet per minute 0 to 10,000 feet per minute
Static Pressure:	0 to 10 inches of water

A take-up adjustment screw **(F)** is provided for tightening the switch plate **(B)** which may work loose through normal wear. A noticeable effort to change the setting of the switch plate will indicate proper tightness.

PITOT PROBE



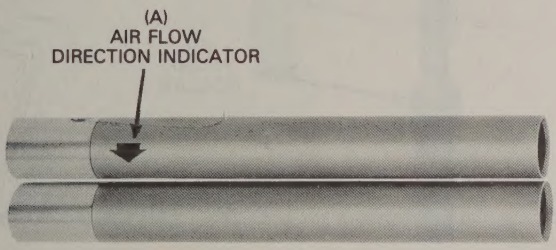
The Pitot Probe is designed to measure the velocity of air in ducts and also in unrestricted areas such as air intakes at grinding/buffing wheels or ventilation slots at plating tanks. For the procedure to measure duct velocities see pages 18 and 19; for other applications see pages 14 and 15.

The air intake (and discharge) for the probe is at **(A).** The probe should be held at right angles to the air flow; an arrow at the base of the probe **(C)** should point in the direction of the air flow.

The probe is marked in one-inch increments **(B)** for convenience in positioning the probe inside ducts.

The probe collar **(D)** acts as a stop when inserting the probe into the Range Selector; an O-ring acts as a seal when the connecting leg is inserted into the Range Selector.

LO-FLOW PROBE

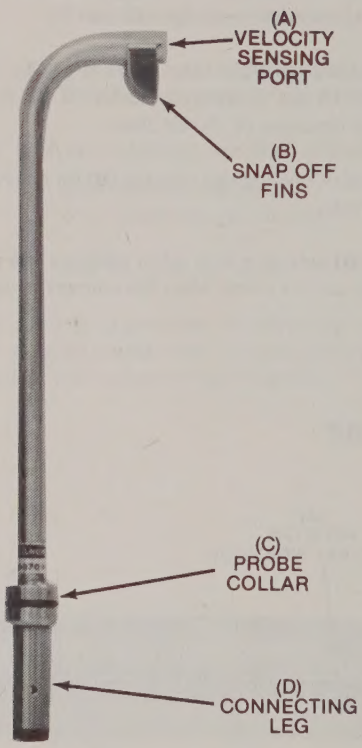


The Lo-Flow Probe is designed for measuring velocities below 300 feet per minute in open spaces; it attaches directly to the Meter without hoses.

An arrow **(A)** on the probe serves as a reminder of the direction you must orient the probe and the Meter when taking measurements.

Refer to page 14 for the proper velocity measuring procedure.

DIFFUSER PROBE



The Diffuser Probe is designed to measure the velocity at diffusers, registers and grilles. The *volume* of air being supplied or exhausted can be determined by multiplying the measured velocity times an air flow factor*. Refer to page 16 for proper diffuser, register, and grille measuring procedures.

The velocity sensing port **(A)** senses the velocity at the diffuser, register, or grille.

* Air flow factors, sometimes known as"K" factors, are generally available from the manufacturer of the grille or diffuser.

The snap-off fins **(B)** allow you to accurately position the probe vertically, horizontally or radially.

The probe collar **(C)** acts as a stop when connecting the probe to the Range Selector, and the O-ring acts as a seal.

The connecting leg **(D)** is inserted into the Range Selector.

STATIC PRESSURE PROBE

The Static Pressure Probe is designed for measuring duct static pressure.

The rubber cap **(A)** provides a seal around the ¼ " hole (in the duct) where measurements are to be taken.

The probe collar **(B)** acts as a stop when connecting the probe to the Range Selector; the O-ring acts as a seal.

The connecting leg **(C)** is inserted into the Range Selector.

Refer to page 10 for the proper static pressure measuring procedure.

PREPARATION FOR USE

DIFFUSER PROBE

Step 1: Remove sensing port caps

Step 2: Connect two hoses **(C)** to sensing ports **(B)**

Step 3: Select proper Range Selector **(D)**

NOTE: For velocities below 2500 feet per minute, use the Range Selector with black letters; for velocities above 2500 feet per minute, use the Range Selector with red letters.

Step 4: Connect Range Selector **(D)** to loose ends of hoses **(C)** that are already connected to the Meter **(A)** as follows:

FOR SUPPLY MEASUREMENTS

Connect the plus (+) sensing port of the Meter to the plus (+) sensing port of the Range Selector, and the minus (—) sensing port of the Meter to the minus (—) sensing port of the Range Selector.

FOR RETURN AND EXHAUST MEASUREMENTS

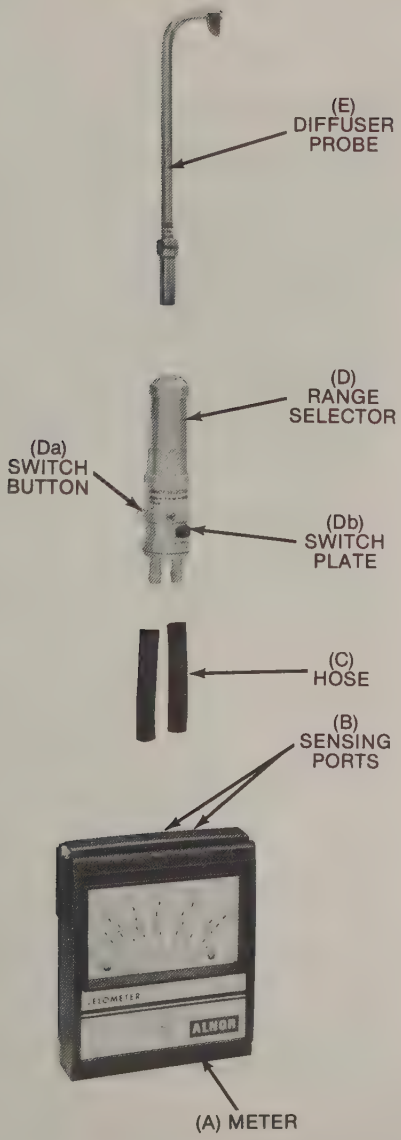
Connect the plus (+) sensing port of the Meter to the minus (—) sensing port of the Range Selector, and the minus (—) sensing port of the Meter to the plus (+) sensing port of the Range Selector.

Step 5: Insert Diffuser Probe **(E)** into the Range Selector **(D)**. Push the Diffuser Probe firmly down until the collar of the probe rests against the top of the Range Selector.

Step 6: Check position of switch button **(D_a)** on Range Selector **(D)**. It must be pushed in and turned to latch it in.

Step 7: Check position of switch plate **(D_b)** on Range Selector **(D)**. It must be positioned for the proper velocity range.

Step 8: Proceed to make necessary velocity measurements; see page 16 for procedures.


(E)
DIFFUSER
PROBE
(D)
RANGE
SELECTOR
(Da)
SWITCH
BUTTON
(Db)
SWITCH
PLATE
(C)
HOSE
(B)
SENSING
PORTS
ALNOR
(A) METER

STATIC PRESSURE PROBE

Step 1: Remove sensing port caps

Step 2: Connect two hoses **(C)** to sensing ports **(D)**

Step 3: Select proper Range Selector **(D)**

NOTE: For 0-1″ static pressures, use Range Selector with black letters; for 1-10″ static pressures, use Range Selector with red letters.

Step 4: Connect the hoses to the Range Selector **(D)** as follows:

For Positive Pressure Measurements

Connect the plus (+) sensing port of the Meter to the plus (+) sensing port of the Range Selector. Connect the minus (—) sensing port of the Meter to the minus (—) sensing port of the Range Selector.

For Negative Pressure Measurements

Connect the plus (+) sensing port of the Meter to the (—) sensing port of the Range Selector. Connect the minus (—) sensing port of the Meter to the plus (+) sensing port of the Range Selector.

Step 5: Select the proper Static Pressure Probe **(E)**

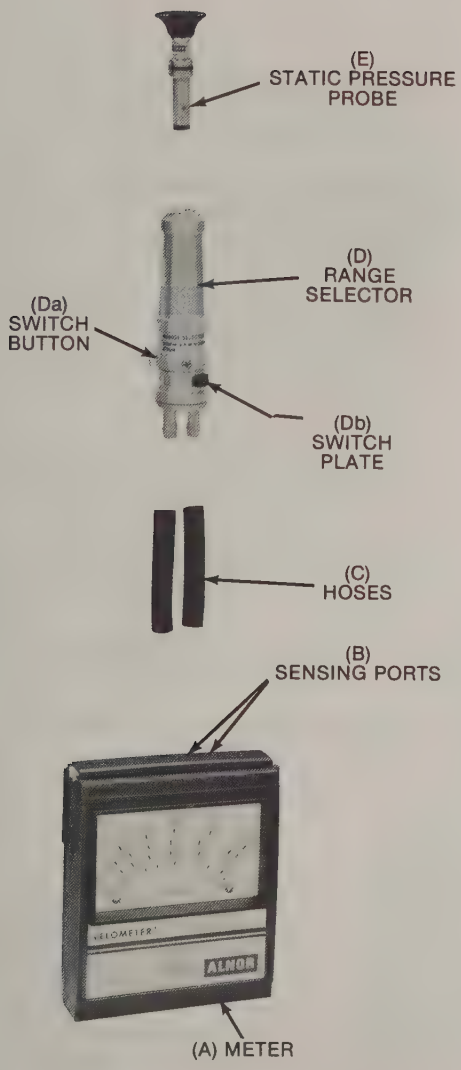
NOTE: For 0-1″ static pressures, use the Static Pressure Probe with black letters. For 1-10″ static pressures, use the Static Pressure Probe with red letters.

Step 6: Insert the Static Pressure Probe **(E)** into the Range Selector **(D)**. Push the probe firmly down until the collar of the probe rests against the top of the Range Selector.

Step 7: Check position of switch plate **(D_a)** on the Range Selector **(D)**. It must be pushed in and turned to lock it in position.

Step 8: Check position of switch plate **(D_b)** on Range Selector **(D)**. It must be to the extreme left.

Step 9: Proceed to make duct static pressure measurements. See page 18 for proper procedure.


(E)
STATIC PRESSURE
PROBE
(D)
RANGE
SELECTOR
(Da)
SWITCH
BUTTON
(Db)
SWITCH
PLATE
(C)
HOSES
(B)
SENSING PORTS
ALNOR
(A) METER

PITOT PROBE

Step 1: Remove sensing port caps

Step 2: Connect two hoses **(C)** to sensing ports **(B)**

Step 3: Select proper Range Selector **(D)**

NOTE: For velocities below 2500 feet per minute, use the Range Selector with black letters; for velocities above 2500 feet per minute, use the Range Selector with red letters.

Step 4: Connect the hoses to the Range Selector **(D)** as follows: The plus (+) sensing port of the Meter to the plus (+) sensing port of the Range Selector and the minus (—) sensing port of the Meter to the minus (—) sensing port of the Range Selector.

Step 5: Insert the Pitot Probe **(E)** into the Range Selector **(D)**. Push the Pitot Probe firmly down until the collar of the probe rests against the top of the Range Selector.

Step 6: Check position of switch button **(D_a)** on Range Selector **(D)**. It must be released and left in the out position.

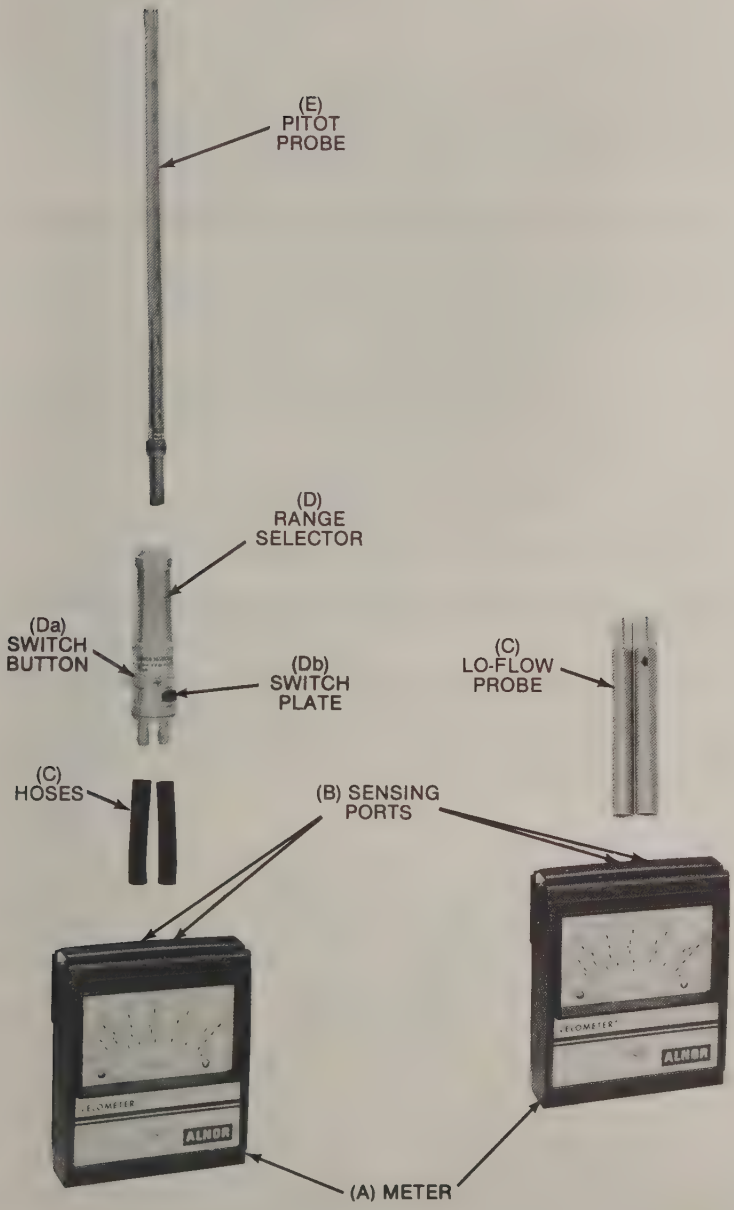
Step 7: Check position of switch plate **(D_b)** on Range Selector **(D)**. It must be positioned for the proper velocity range.

Step 8: Proceed to make necessary duct velocity measurements. See **page 19 for proper procedures.**

LO-FLOW PROBE

Step 1: Remove sensing port caps

Step 2: Connect the Lo-Flow Probe **(C)** directly to the Meter **(A)** by placing it onto the sensing ports **(B)**; no hoses are required. It fits only one way onto the Meter, with the arrow pointing to the left when viewing the Meter from the front.


(E)
PITOT
PROBE
(D)
RANGE
SELECTOR
(Da)
SWITCH
BUTTON
(Db)
SWITCH
PLATE
(C)
LO-FLOW
PROBE
(C)
HOSES
(B) SENSING
PORTS
ALNOR
ALNOR
(A) METER

OPERATION

After assembling the correct probe to the Velometer as shown on pages 6 to 8 you are ready to take the necessary measurements. Below are some typical applications and cautions when using the various probes. When using the Velometer for measuring air velocity at conditions other than 30 in. Hg and 72° F refer to the correction chart on page 24 for maximum accuracy.

PROCEDURE FOR MEASURING VELOCITY WITH LO-FLOW PROBE

1. Place the meter where you wish to measure the air flow. If you are holding it, keep it at arm's length and stand so you do not obstruct the free flow of air past the Meter.

2. Hold the Meter so that the arrow on the probe points in the direction of air flow; if the direction is not known, turn the Meter until you observe the maximum pointer deflection.

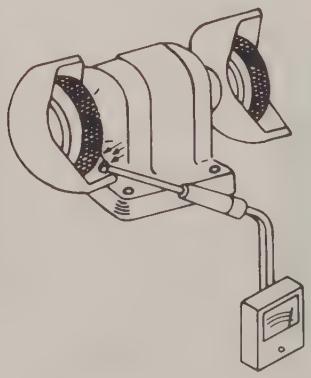
3. Read the air velocity on the 0 to 300 FPM scale.

4. Record the reading on an appropriate air balancing worksheet.

VELOCITIES AT SUCTION OPENINGS-EXCEPT DIFFUSERS OR GRILLES

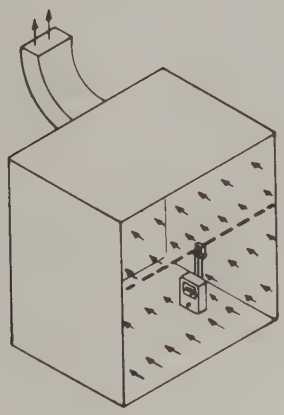
At Grinding or Buffing Wheels:

When measuring velocities at grinding or buffing wheels, use the Pitot Probe or the Lo-Flow Probe. The head of the probe should be held in a plane defined by the outside edge of the hood.



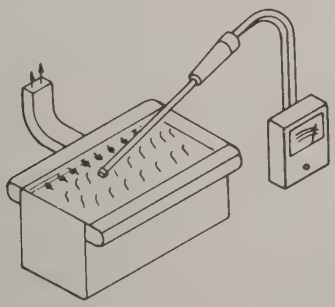
At Spray Booths:

When measuring the velocity at spray booths, use the Lo-Flow Probe. The head of the probe should be placed in a plane defined by the outside edge of the spray booth.



Velocities at Plating Tanks:

To measure the velocity at plating tanks, use the Pitot Probe. The probe should be held close to the exhaust port of the tank, with the arrow on the probe pointing toward the exhaust port.



PROCEDURE FOR MEASURING DIFFUSER, REGISTER AND GRILLE VELOCITIES WITH DIFFUSER PROBE

To calculate the air *volume* passing through a diffuser, register or grille outlet, measure the velocity at the outlet, applying the air flow factor that is provided by the outlet manufacturer, and use the following equation:

$$Q = K \times V$$

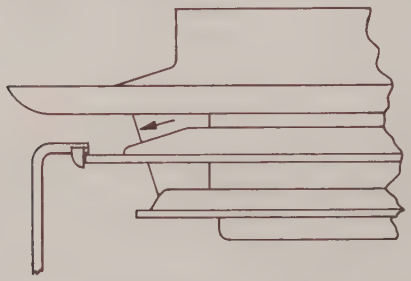
Where	English Units	Metric Units
Q = Quantity of Air	ft^3/min	m^3/s
K = Manufacturers' flow factor	—	—
V = Average measured velocity	ft/min	m/s

Instructions for positioning the Diffuser Probe at the outlet for measuring the velocity, as well as an appropriate flow factor, are available from the outlet manufacturer. Shown below is a typical example:

TYPICAL DIFFUSER AIR FLOW MEASURING PROCEDURE

To determine the volume of air discharged, a Velometer with a Diffuser Probe may be used as shown below.

Note that the bottom of the positioning fins on the probe are level with (and touching) the bottom of the intermediate spinning of the diffuser. The probe is held vertically. The flow factors shown in the accompanying table are applied to an average of six velocity readings taken at equally spaced positions around the periphery of the diffuser.



DIFFUSER SIZE	AIR FLOW FACTOR
10	.42
12	.66
14	0.9
17	1.3
20	1.8
24	2.8
32	4.9
40	7.7

For maximum accuracy observe the following precautions:

1. Use only the appropriate diffuser, register or grille manufacturers' measuring procedures.

2. Make a complete and accurate velocity reading.

3. Record the velocity measurements on a diffuser air balancing worksheet as shown.

AIR BALANCING—DIFFUSER READINGS

JOB NAME THOREAU MFG. CO. SYSTEM BLDG. 42

1 ROOM LOCATION OR DIFFUSER NO.	2 SUPPLY OR RETURN MODEL SIZE	3 FLOW FACTORS OR NET CORE AREA Ft²	4 DESIGN AIR FLOW CFM	5 DESIGN OUTLET VELOCITY FPM	6 MEASURED AVERAGE VELOCITY READING – FPM	7 MEASURED AIR FLOW CFM	8 REMARKS
Grille							
A #18	12×8	.581	620	1067	1210	703	
A #19	14×12	.855	1100	1287	1350	1154	
A #20	12×8	.581	620	1067	1180	686	
A #21	12×8	.581	620	1067	1200	697	
A #22	14×12	.855	1100	1287	1340	1146	
A #23	12×8	.581	620	1067	1200	697	
B #24	12×10	.598	780	1304	1450	867	
B #25	12×10	.598	780	1304	1350	807	
A #26	12×8	.581	620	1067	1180	686	
A #27	14×12	.855	1100	1287	1300	1112	
A #28	12×8	.581	620	1067	1300	755	
A #29	12×8	.581	620	1067	1230	715	
A #30	14×12	.855	1100	1287	1380	1180	
A #31	12×8	.581	620	1067	1160	674	
B #32	12×10	.598	780	1304	1400	837	
B #33	12×10	.598	780	1304	1450	867	
	Sub-total		12480			13,583	

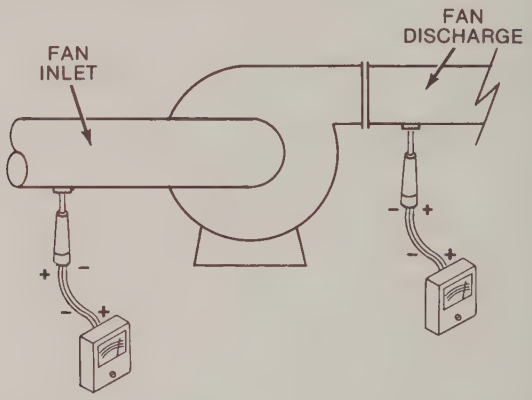
INSTRUMENT: ALNOR VELOMETER BY FH

4. When the procedures instruct you to apply an average velocity reading, divide the opening into a number of equal areas and determine an average of single readings taken at the center of the equal areas.

5. When making a record of the measurements, include room location, outlet model, flow factor, design air volume if known, measured outlet velocity and calculated air volume.

PROCEDURE FOR MEASURING STATIC PRESSURE

1. Select the location for the static pressure reading, and drill a ¼ " hole. You may wish to paint a circle around the hole and number it, for future convenience.
2. Assemble the Velometer for positive (or negative) readings as described above.
3. Place the rubber cup of the probe firmly over the hole, and read the static pressure on the black or red "Inches of Water Gauge" scale.
4. Record the reading on an appropriate air balancing worksheet.



PROCEDURE FOR AIR FLOW MEASUREMENT IN DUCTS

To calculate the air volume passing through a duct, measure the average velocity inside the duct, determine the cross-sectional area of the duct, and apply the following equation:

$$Q = A \times V$$

Where	English Units	Metric Units
Q = Quantity of Air	ft^3/min	m^3/s
A = Cross-section area	ft^2	m^2
V = Average duct velocity	ft/min	m/s

Determine Cross-Section Areas

The cross-section of the duct is based on the actual inside duct area through which air flows. If the duct is internally lined with insulation, the thickness of that insulation must be taken into consideration when calculating the duct area.

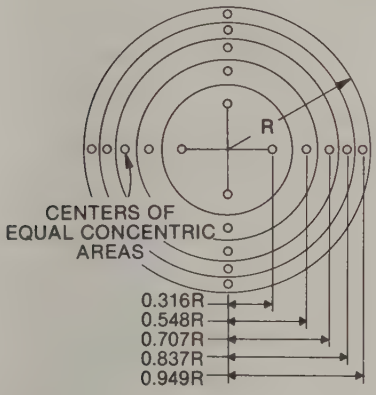
Example: 24 " wide x 12 " high duct with no internal insulation has a cross-section area of 2 square feet.

38 " wide by 14 " high duct with 1 " internal insulation has a cross-section area of 3 square feet.

Measuring Duct Velocity

The velocity of an air stream in a duct is not unifom throughout the cross-section; air near the walls moves more slowly due to friction. Elbows, transitions and obstructions also cause variations in the velocity at any one cross-section.

To obtain the average velocity in ducts of 4″ diameter or larger, drill a ½″ diameter or larger hole in the duct and take a series of duct velocity readings (commonly referred to as a traverse), with the Pitot Probe, at points of equal area across the duct. A formal pattern of sensing points is recommended and these points are referred to as traverse point readings. Shown are recommended velocity reading point locations for traversing round and square (or rectangular) ducts.



ROUND DUCT TRAVERSE POINTS

NOTE: PITOT PROBE STATIONS INDICATED BY ○

SQUARE AND RECTANGULAR DUCT TRAVERSE POINTS

In round ducts, take velocity readings at the center of equal concentric areas; take at least 20 readings along two diameters. In square or rectangular ducts, take a minimum of 16 and a maximum of 64 readings at centers of equal areas. Calculate the average of all readings.

For maximum accuracy, observe the following precautions:

1. Perform the traverse in a section of the duct where the air stream is as uniform as practical. This is generally a location of eight or more duct diameters of straight duct upstream from the traverse location.
2. Do not take the traverse near a duct elbow, transition or obstruction.
3. Make a complete, careful and accurate traverse and record the results on a worksheet.

LIST OF MODELS AND ACCESSORIES

Series 6000 Velometer Sets

MODEL	DESCRIPTION	PART NUMBER
6000AP	All Purpose Set	634-090-010
6000BP	Air Conditioning Set	634-090-028
6000AP-M/S	Metric All Purpose Set	634-091-016
6000BP-M/S	Metric Air Conditioning Set	634-091-023

Series 6000 Accessories

MODEL	DESCRIPTION	PART NUMBER
6006AP	Velometer for Set A (1)	634-010-014
6006BP	Velometer for Set B (2)	634-010-021
6006AP-M/S	Velometer for Set A-M/S	634-011-010
6006BP-M/S	Velometer for Set B-M/S	634-011-027
6030BP	Range Selector (0-1250/2500 + 0-3″ H_2O) (2)	634-020-026
6030CP	Range Selector (0-1250/2500 + 0-1″ H_2O) (1)	634-020-033
6030DP	Range Selector (0-5000/10000 + 0-10″ H_2O) (1)	634-020-040
6030BP-M/S	Range Selector (0-6.25/12.5 MPS + 0-75 mm H_2O)	634-021-021
6030CP-M/S	Range Selector (0-6.25/12.5 MPS + 0-25 mm H_2O)	634-021-039
6030DP-M/S	Range Selector (0-25/50 MPS + 0-250 mm H_2O)	634-021-046
6050P-1	Lo-Flow Probe (1) (2)	634-030-020
6060P-12	12″ Pitot Probe (305 mm) (1) (2)	634-031-019
6060AP-24	24″ Pitot Probe (610 mm)	634-031-026
6060BP-36	36″ Pitot Probe (915 mm)*	634-031-033
6070P	Diffuser Probe, 7″ Long-90g (1) (2)	634-032-014
6070P36	Diffuser Probe, 36″ Long-90g	634-032-021
6070P-36S	Troffer Probe, 36″ Long-straight	634-032-039
6080AP	Static probe (0-10″ H_2O) (1)	634-033-010
6080BP	Static probe (0-3″ H_2O) (2)	634-033-027
6080CP	Static probe (0-1″ H_2O) (1)	634-033-034
6080AP-mmW	Static probe (0-250 mm H_2O)	634-033-041
6080BP-mmW	Static probe (0-75 mm H_2O)	634-033-059
6080CP-mmW	Static probe (0-25 mm H_2O)	634-033-066
	Single Hose (1) (2), 24 in. long	634-040-018
	Case - Set A or B (1) (2)	634-040-025

(1) Included in 6000AP Set, with two hoses
(2) Included in 6000BP Set, with two hoses

*The 36″ Pitot Probe, due to the friction of the air in the longer tube, will cause the Velometer to read 100 feet per minute low across the entire scale.

MAINTENANCE

GENERAL

Alnor Velometers require very little service except for replacement of O-ring gaskets, and cleaning or replacing the filter elements in the Range Selectors. If any difficulties in the operation of the Velometer should develop, please contact the nearest Alnor Sales Representative or the Alnor Instrument Company. Do not return any instruments without written authorization from Alnor Instrument Company.

CLEANING OF THE VELOMETER

In case it is necessary to clean the exterior of the meter, use a damp cloth or a cloth moistened with alcohol and wipe the exterior carefully. Do not rub excessively. DO NOT USE CARBON TETRACHLORIDE.

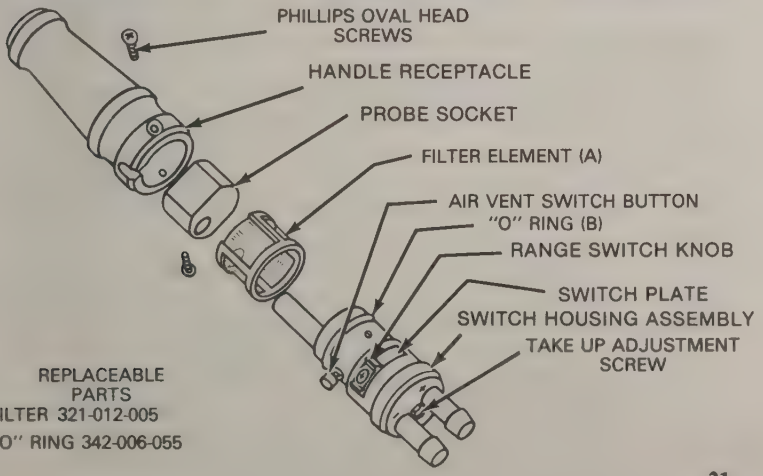
REPLACEMENT PARTS AND ACCESSORIES

In case additional parts are required to convert one Velometer set to another, or in case broken or damaged parts must be replaced, order the parts from the factory. All parts are interchangeable and no specific calibration or probes is required with any particular instrument; simply specify the Alnor number of the replacement part or accessory.

Replacement of Range Selector Filter

To replace the filter of the Range Selector, proceed as follows:

Remove the two Phillips Head screws on the collar above the Range Selector switch. Exert slight pressure to hold the upper and lower half of the Range Selector assembly together to permit easy withdrawal of the two screws. Carefully pull the upper and lower half of the Range Selector assembly apart.



Withdraw the filter Part Number 321-012-005. Carefully clean the filter element by means of a brush or vacuum cleaner, or wash it in hand-warm water and with grit-free soap. In case the filter element is damaged, replace it. Before reassembling the Range Selector, carefully clean all parts.

To install the cleaned or replacement filter, slip the bore of the filter over the protruding nipple portion of the lower Range Selector part. Place the filter element onto the lower Range Selector part with the open end down. Then slip the probe socket over the protruding nipple portion. Carefully align all three outside diameters of the lower Range Selector part, the filter and the probe socket. Slip all three parts into the upper Range Selector housing so that the air vent switch button protruding from the lower Range Selector assembly aligns with the channel in the upper Range Selector assembly. Exert slight pressure when inserting the Phillips Head screw and lightly tighten both Phillips Head screws.

Replacement of O-Rings in Probes

To replace the O-ring in the probes remove the old O-ring by means of a hook-shaped tool, or by squeezing. Clean the O-ring groove before installing the new O-ring. Slip the new O-ring in place and apply a thin film of Silicone grease or lubricant on the outside of it. The O-ring Part Number 342-006-048 fits all Velometer probes.

Replacement of O-Rings on the Meter

Replace the O-rings of the Meter connection ports first by removing the old O-rings using a hook or by squeezing; clean the grooves and then slip new O-rings Part Number 342-006-030 in place.

RECALIBRATION

Your Velometer should be returned to the factory for checking and/or recalibration six months after first use, and thereafter at least once a year, depending on how it is used.

It should be carefully packed according to the instructions in this manual and shipped to

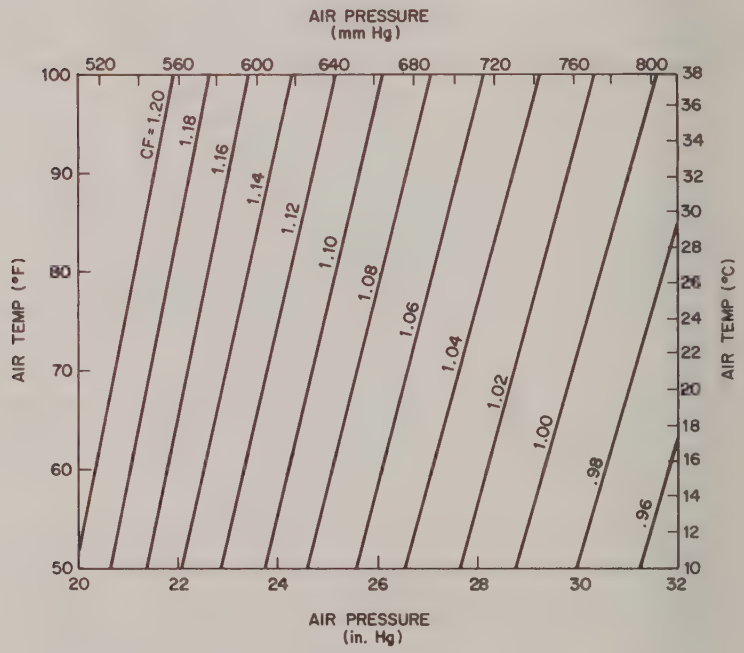
ALNOR INSTRUMENT COMPANY
7555 N. Linder Avenue, Skokie, IL 60077
Attention: SERVICE DEPARTMENT

TROUBLE SHOOTING GUIDE

PROBLEM	CORRECTION
Velometer not at zero (before use.)	Velometer not adjusted. See zero adjustment method, page 2.
	Assembled probe and meter accidentally reading pressure or air flow. Check adjustment with caps on sensing ports.
	If Velometer does not remain at zero in all positions it should be returned to the factory for calibration.
Readings not the same from range to range.	Different probes being used. The same probe should be used on both ranges.
	Wrong probe being used. See pages 8-13 for correct application.
	Measurement technique is different. Hold probe in the same way, and at the same place in the air flow, on all ranges.
	Different Range Selector in use. Be sure that both Range Selectors are in operating condition: O-rings not worn, filters clean.
	Range Selector switch not in operating position. Switch plate must be at either extreme of its travel.
Readings are low.	Verify that the proper probe is being used.
	Check for leaks in the O-rings in the meter, range selector and probe. Replace if necessary.
	Filter in the range selector needs to be cleaned.
	Wrong scale is being read, or probe switch not set properly.
	Hoses are not 24 in. long. Do not use hoses that are different (longer or shorter) than those originally provided with the Velometer.
No readings.	Air flow is being blocked by operator's hands.
	Hand on the switch button of Range Selector. (See page 3).
	Hoses or probe not connected.
Negative readings.	Probe not being used properly. (See section of manual describing use of specific probes).
	Hose connections must be reversed, either at the Range Selector or at the Meter.

TEMPERATURE AND PRESSURE CORRECTIONS

The maximum temperature of the air or gas that can be tested by the Velometer is 250° F (120° C). When the temperature of the gas inside a duct is appreciably different from the temperature at which the Velometer was calibrated, a correction factor may be needed to obtain the most accurate measurement. The actual velocity is obtained by multiplying the measured velocity by a correction factor as shown in the figure below.



NOTE: 1 (in. H_2O) X 7.36 (10^{-2}) = 1 in Hg

VELOMETER CORRECTION FACTORS

SPECIFICATIONS

Accuracy		
	Velocity	±2% of full scale, all ranges
	Static Press.	±5% of full scale, all ranges
Read-out time		4 to 8 seconds
Dimensions (Meter)		6 1/2 x 6 x 2 1/2 inches Weight 1.75 lbs.
Ranges (Scale markings)		
6006-AP	Velocity	0 to 300, 1250, 2500, 5000, 10000 FPM (0 to 1.5, 6.25, 12.5, 25, 50 meters/sec)
	Static Press.	0 to 1.0, 10.0 in. water (0 to 25,250 mm.)
6006-BP	Velocity	0 to 300, 1250, 2500 FPM (0 to 1.5, 6.25, 12.5 meters/sec)
	Static Press.	0 to 3.0 inches water (0 to 75 mm.)

WARRANTY/REPAIR INFORMATION FORM

Contact Alnor Instrument Company before returning your Alnor Instrument to the factory. Send your instrument to the factory transportation prepaid. To assure fast turn-around time, fill out this form with as much detail as possible and attach it to the instrument.

Instrument Model _____

Serial Number _____

Describe malfunction _____

_____

_____

_____

Describe environment _____

_____

_____

_____

Return instrument to:

Name _____
(Your name or company)

Address _____

_____

Telephone _____

Address correspondence to:

Name _____

Address _____

_____

Telephone _____

INSTRUCTIONS FOR RETURN

Damaged In Transit

All shipments are carefully examined by Alnor Quality Assurance and carefully packed for shipment. They are insured in the customer's name with the carrier.

On receipt, if the shipping container appears to have been damaged during shipment, the instrument should be thoroughly inspected. The delivering carrier's papers should be signed noting the apparent damage.

If the instrument itself has been damaged, a claim should be promptly filed against the carrier by the customer. Alnor will assist the customer by supplying all pertinent shipping information; however, claim must be filed by the insured.

If the instrument is damaged beyond use, a new order should be placed with Alnor while awaiting reimbursement from the carrier for the damaged instrument.

Malfunction

If any fault develops, the following steps should be taken:

1. Notify the factory, stating model and details of the difficulty.

2. Upon receipt of shipping instructions, send the product to the factory with your purchase order, transportation prepaid. If the product is not under warranty, a charge will be made. If requested, an estimate can be given before work is started.

Shipping

All Alnor products should be packed in strong containers and surrounded by at least two inches of suitable shock-absorbing material.

Ship to:
Alnor Instrument Company
7555 N. Linder Avenue
Skokie, Illinois 60077
Attention: Service Department

Equipment Log

MODEL _____

DATE OF
PURCHASE _____

CALIBRATION RECORD

1. _____ 2. _____ 3. _____

4. _____ 5. _____ 6. _____

7. _____ 8. _____ 9. _____

10. _____ 11. _____ 12. _____

NOTES: _____

ALNOR INSTRUMENT COMPANY

7555 N. LINDER AVENUE
SKOKIE, ILLINOIS 60077
(312) 647-7866 • TELEX 72-4458

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